

Governor's Water Augmentation,  
Innovation, and Conservation  
Council Meeting  
September 16, 2021



# Agenda

- I. Welcome and Introductions
- II. Update on Colorado River Shortage – *Council Chair, ADWR Director Tom Buschatzke*
- III. Committee Updates
  - a. Non-AMA Groundwater Committee
  - b. Desalination Committee
  - c. Long-Term Water Augmentation Committee
  - d. Post-2025 AMAs Committee
- IV. Overview of AMA Agriculture Best Management Practices (BMPs) Program – *Natalie Mast, AMA Director Management Plans*
- V. Closing Remarks
- VI. Next Meeting
  - December 9, 2021, 10:00 a.m. - 12:00 p.m.**
- VII. Adjournment



# Webinar Logistics

- Please state your name when speaking.
- Mute yourself when not speaking.
- Indicate you wish to speak by typing your name in the chat box, and you will be invited to unmute and speak.
- Please message “Everyone” in the chat.
- The meeting and chat will be recorded.

Technical issues? Send a **direct message to ADWR-Host** in the chat, call the ADWR Help Desk at 602-771-8444 or email [tickets@azwater.gov](mailto:tickets@azwater.gov).



# I. Welcome and Introductions



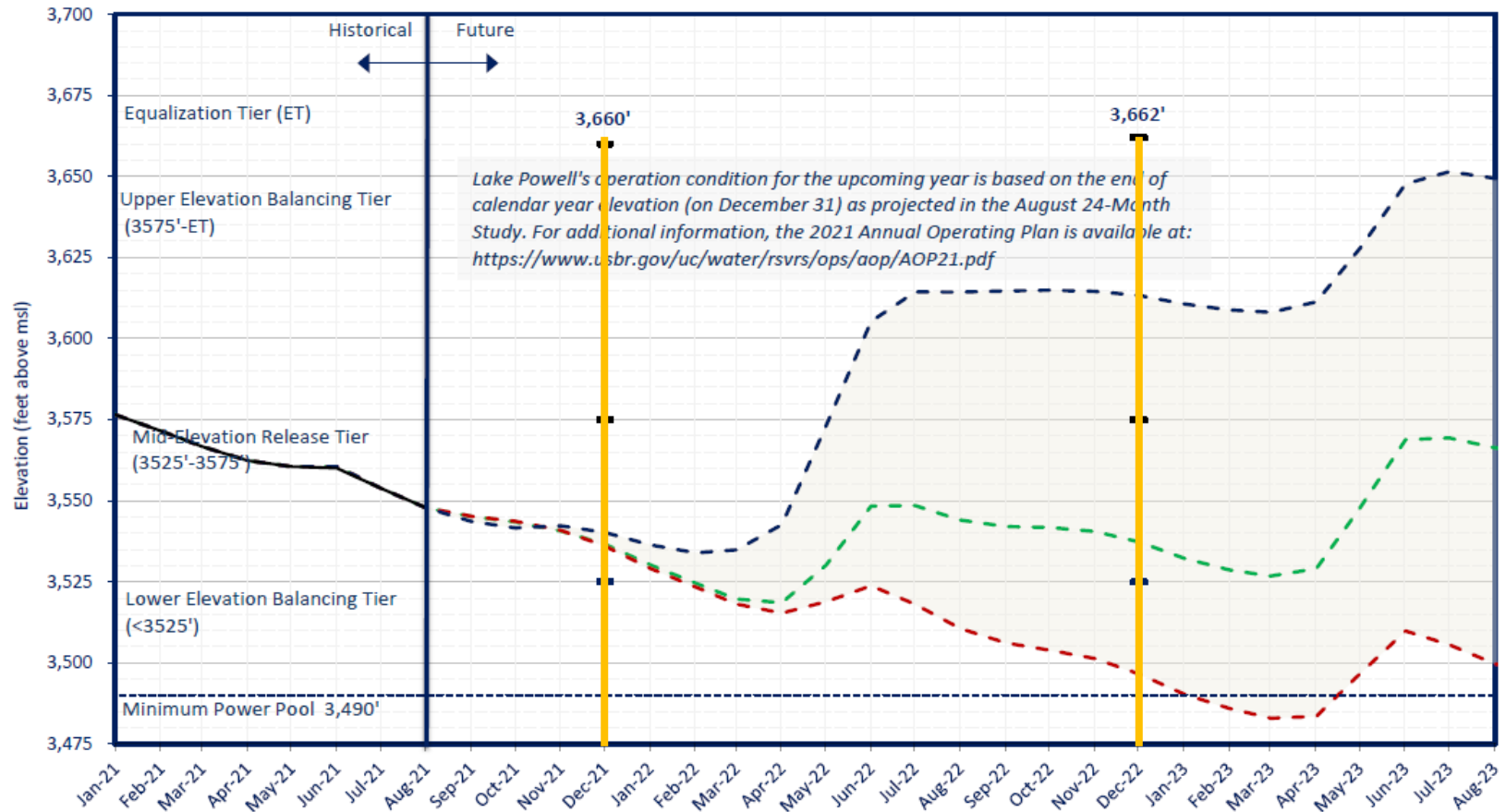
## II. Colorado River Update



*Council Chair, ADWR Director Tom Buschatzke*

# Lake Powell End of Month Elevations

Projections from the September 2021 24-Month Study Inflow Scenarios



Lake Powell's operation condition for the upcoming year is based on the end of calendar year elevation (on December 31) as projected in the August 24-Month Study. For additional information, the 2021 Annual Operating Plan is available at: <https://www.usbr.gov/uc/water/rsvrs/ops/aop/AOP21.pdf>



BUREAU OF RECLAMATION

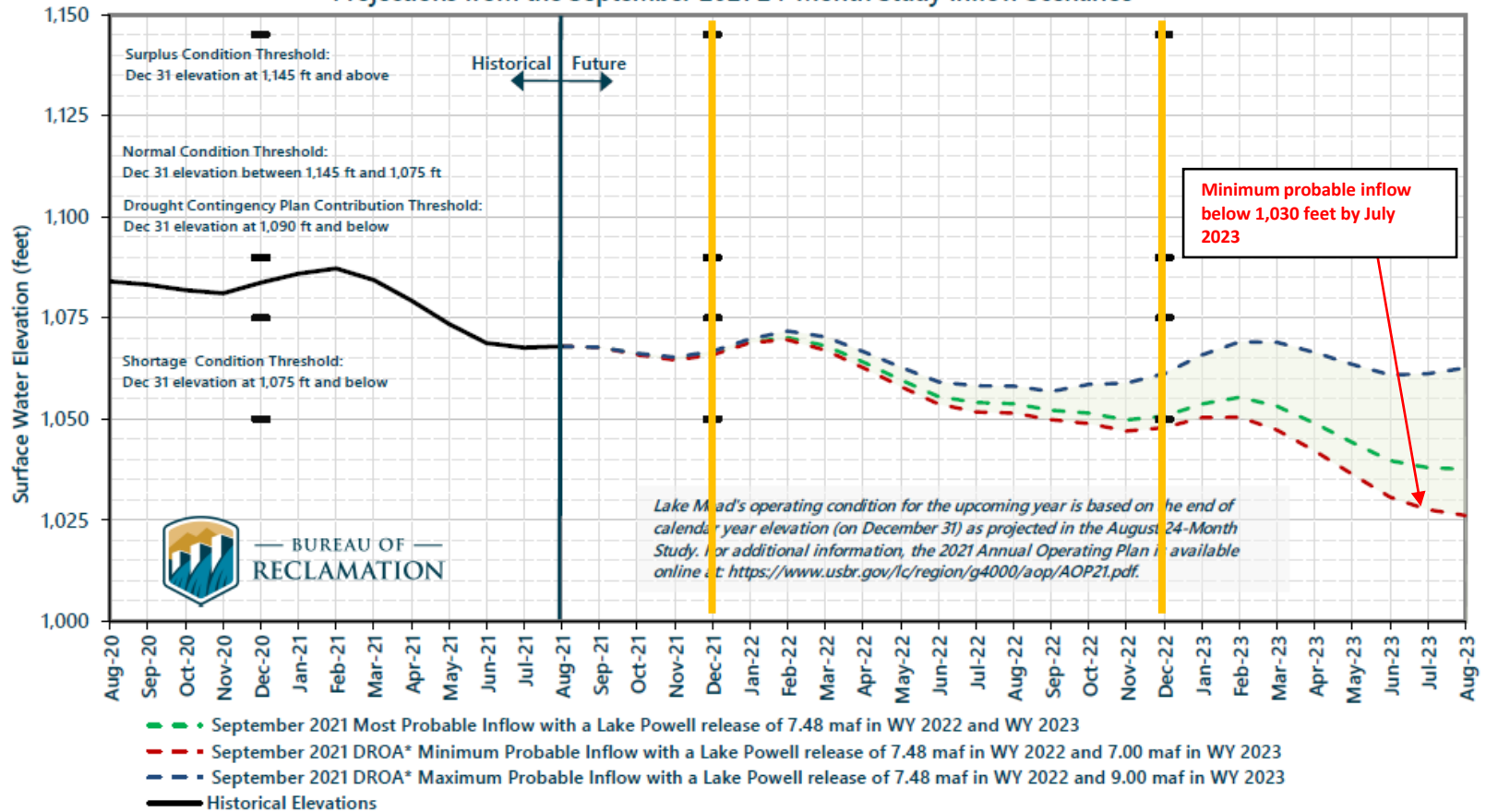
- September 2021 Most Probable - Lake Powell release of 8.23 maf in WY2021 and 7.48 maf in WY2022
- September 2021 \*DROA Minimum Probable - Lake Powell release of 8.23 maf in WY2021 and 7.48 maf in WY2022
- September 2021 \*DROA Maximum Probable - Lake Powell release of 8.23 maf in WY2021 and 7.48 maf in WY2022
- Historical Elevations

\*The Drought Response Operations Agreement (DROA) can be found here: <https://www.usbr.gov/dcp/finaldocs.html>



# Lake Mead End of Month Elevations

Projections from the September 2021 24-Month Study Inflow Scenarios



\*The Drought Response Operations Agreement (DROA) is available online at: <https://www.usbr.gov/dcp/finaldocs.html>.



# Lower Basin Drought Contingency Plan 1,030' Consultation

- The Bureau's projections in its August 24-month study concluded Lake Mead could descend below 1,030 feet in July 2023.
- That projection triggers Section V.B.2 of the Lower Basin Drought Contingency Operations, which requires the Lower Basin States to consult, along with Interior, on taking additional measures prior to Lake Mead falling below elevation 1,020 feet.
- While there is no formal timetable, the Lower Basin States already have begun discussions.





# III. Committee Updates

- a. Non-AMA Groundwater Committee
- b. Desalination Committee
- c. Long-Term Water Augmentation Committee
- d. Post-2025 AMAs Committee



# Non-AMA Groundwater Committee

## Co-Chairs Representative Gail Griffin and Jamie Kelley

Next meeting: TBD

- Last met on December 10, 2020 ([Meeting Recording](#))
- Recent efforts are underway to plan for a meeting date, tentatively looking towards mid-October



# Desalination Committee

## Chairman Henry Day

Next meeting: TBD



# Recap and Work to Date

## Summary of committee activities and outcomes to date:

- \* Explored opportunities for increased use of brackish, or poor quality, groundwater supplies
  - Extent of brackish groundwater supplies, potential locations for additional projects, technologies and financing
- \* Created an overview of permitting requirements for brine waste disposal
  - [Brine Permitting Fact Sheet](#)
- \* Discussed the Yuma Desalting Plant (YDP) and potential benefits to central Arizona's Colorado River supply
  - [YDP Memo to Governor's Water Council from CAWCD](#)



# Examples of Brackish Water Desalination

- \* Currently >300 inland brackish desalination plants provide water to US municipalities
  - The first municipal desalination plant in the US was operated by the Town of Buckeye from 1962 to 1988

## **Examples of Brackish Groundwater Utilization in Arizona:**

- \* The Bullard Water Campus Reverse Osmosis plant operated by the City of Goodyear; the largest municipal desalination plant in Arizona
  - Treats 4.5 million gallons of water per day and generates 1 million gallons of brine waste
- \* Agriculture in the Buckeye Waterlogged Area has long utilized brackish groundwater supplies



# Efforts and Outcomes of the Legal & Regulatory Subcommittee

- \* The Legal and Regulatory Subcommittee was formed to identify and discuss regulatory and legal barriers to increased use of brackish groundwater
  - Created a Summary of Discussion and Findings ([Regulatory Background & Summary of Discussion](#))
  - The primary finding of the subcommittee is that there are no legal or regulatory constraints specific to the use of brackish or poor-quality groundwater in Arizona law
- The Subcommittee reported to the Committee at the March 25<sup>th</sup> meeting



# Summary and Take-Aways

- \* ADWR Deputy Counsel, Jennifer Heim, presented on brackish groundwater and Arizona law at the Committee meeting on August 26th.
- \* High level summary points include:
  - Brackish groundwater is already “accounted for” as groundwater throughout the programs administered by ADWR.
  - Consideration of proposals that would “carve out” brackish groundwater from certain regulations may have impacts to existing water users, some of whom may have relied on the current framework.
  - Such proposals should also be considered in view of the primary objectives of the Groundwater Code, including the assured water supply program.



# Desalination Committee Next Steps





# Recommendations

## **In conclusion, the committee brings two recommendations to the Council:**

1. As there are no barriers specific to the use of brackish groundwater, the Committee concludes no changes are necessary to the current regulatory framework to enable its use and recommends brackish groundwater continue to be regulated as it is, as groundwater.
2. The committee recommends that unless the Council identifies additional tasks to pursue, that the committee be put on standby until recalled for additional work.



# Questions for the Desalination Committee?

Chair: Henry Day

Governor's Water Augmentation, Innovation & Conservation Council

September 16, 2021

# Long-Term Water Augmentation Committee

## Chairman Wade Noble

Next meeting: TBD



# Enhanced Recharge Potential

**Committee met on August 3, 2021**

- \* ADWR Deputy Assistant Director, Carol Ward, introduced the topic

“It is important to think about the possibility and perhaps necessity of enhanced stormwater recharge projects in the context of the hotter, drier future that may already be upon us, while still acknowledging the concerns that have been raised for these types of projects in the past.”



# Enhanced Recharge Potential

ADWR Senior Research Hydrologist, Keith Nelson, presented on the **potential for enhanced recharge of stormwater, at a regional scale.**

- \* Shared examples of areas in the state already benefiting from enhanced recharge
  - Nogales Arizona, in the Santa Cruz AMA – periodic renewable flood recharge, excellent recharge efficiency & dynamic operations of well fields
- \* Presented on potential for enhanced recharge in the Prescott AMA
  - Convey water from Lonesome Valley (high evaporation/low recharge potential) to Granite Creek (high recharge potential)



# Take-Aways

- \* The dominant type of recharge in an area varies on a regional scale and is dependent on the hydrogeology of an area. Therefore, the **potential feasibility of enhanced recharge efforts also varies on a regional scale.**
- \* Without enhanced and targeted recharge, **in arid environments most of the precipitation** from large storm events is **lost to evapotranspiration**, citing an **estimated average of ~95%.**



# Discussion/Guiding Questions Covered

- What needs to be better understood from a technical, regulatory, or legislative perspective in order to move forward with these discussions?
- What hurdles will need to be overcome to make this a viable water augmentation solution?

**It will take time to fully explore the topic, understand what additional information may be needed, and discuss issues, concerns, and possibilities**



# Long-Term Water Augmentation Committee Next Steps





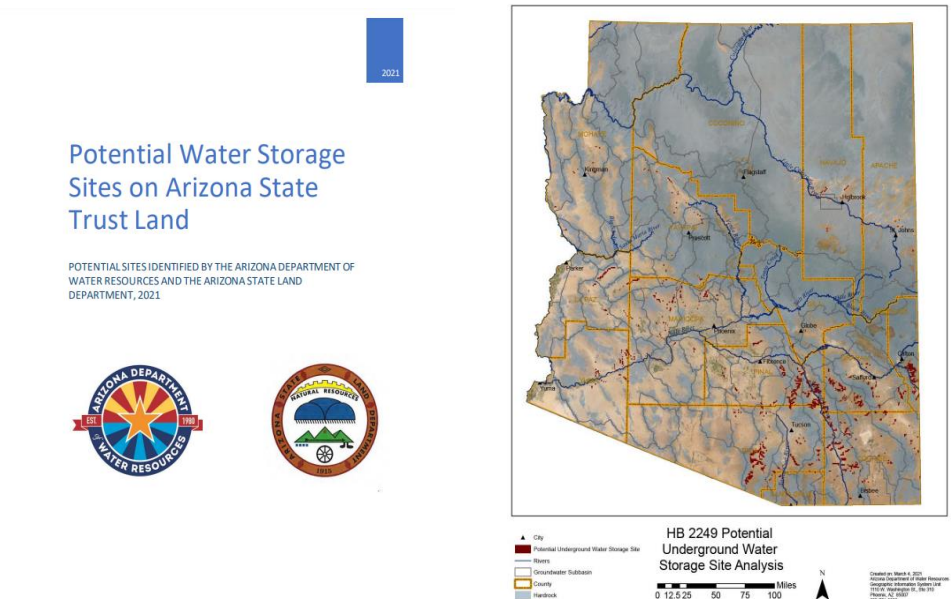
# Storage Sites Subcommittee Outcomes

## 2021 Potential Water Storage Sites on Arizona State Trust Land Report

- \* Delivered August 24<sup>th</sup> and published to website
- \* [Potential Water Storage Sites on State Trust Land](#)

## Guide to Underground Water Storage Site Selection

- \* Final revisions and edits underway by Department staff
- \* [Draft Guide to Underground Water Storage Site Selection Link](#)



# Questions for the LTWA Committee?

Chair: Wade Noble

Governor's Water Augmentation, Innovation & Conservation Council

September 16, 2021

# Governor's Water Augmentation Innovation & Conservation Council Post-2025 AMAs Committee Update

September 16, 2021





An aerial photograph of a vast agricultural landscape. A multi-lane highway runs vertically through the center of the image. On either side of the highway are large, rectangular plots of land, some of which are green (likely crops) and others brown (possibly fallow or dry). In the far distance, a range of mountains is visible under a clear sky. A semi-transparent circular overlay is positioned on the left side of the image, containing text.

## Recent Meetings

Presentation and Discussion on these interconnected issues -

- June 22<sup>nd</sup> – Groundwater in the Assured Water Supply Program
- August 10<sup>th</sup> – Unreplenished Groundwater Withdrawals
- September 9<sup>th</sup> – Hydrologic Disconnect
- GWAICC September 16<sup>th</sup> – Committee Update





## **Next Steps**

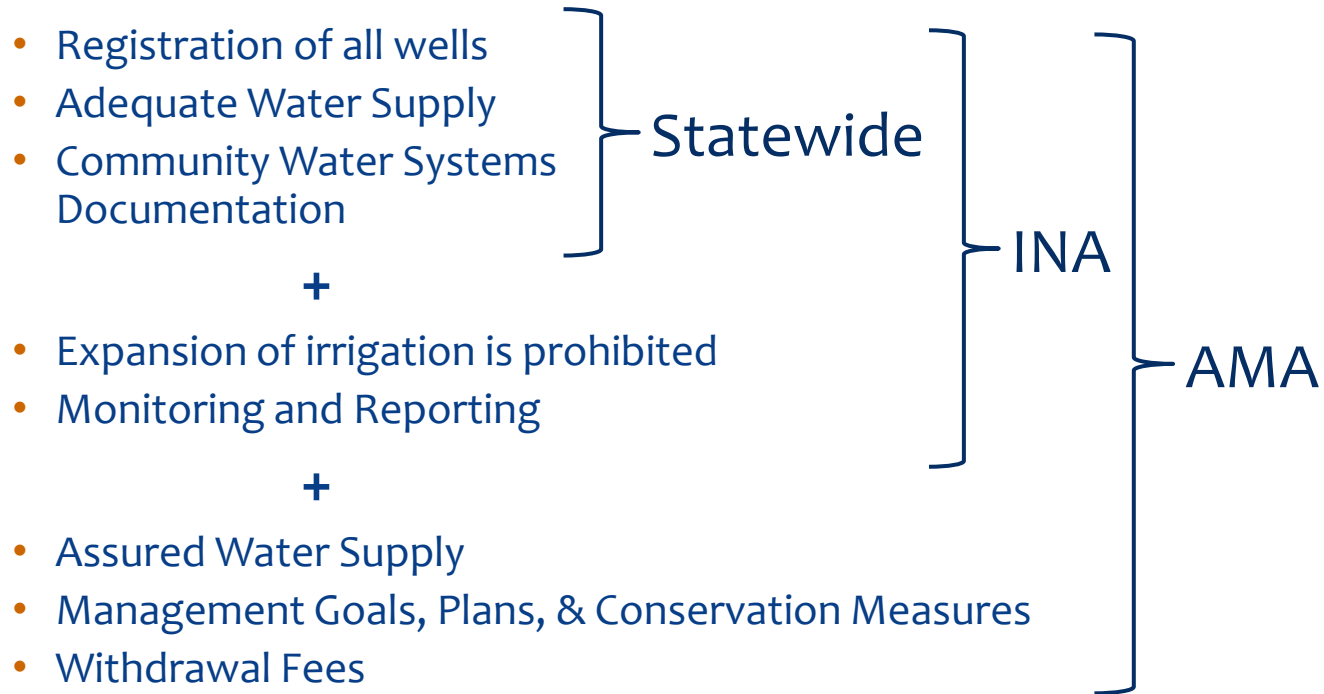
- October through December – Considering issues holistically, fine-tune most realistic, supported strategies and solutions to address the three issues.
- GWAICC December 9<sup>th</sup> – Present general-consensus proposals
- 2022 – Continue discussion to develop additional strategies and solutions

# IV. Overview of AMA Agriculture Best Management Practices (BMPs) Program



*Natalie Mast, Active Management Areas Director,  
Management Plans*

# Regulatory Structure



# Management Plans

A.R.S. § 45-563 (A)

*“The director shall develop a management plan for each initial active management area for each of five management periods... and shall adopt the plans only after public hearings... The plans shall include a continuing mandatory conservation program... designed to achieve reductions in withdrawals of groundwater.”*





# Agricultural BMP Program

A.R.S. § 45-568.02(G)

*“The director shall include... a best management practices program... in lieu of complying with an irrigation water duty and a maximum annual groundwater allotment. The program shall be designed to achieve conservation that is at least equivalent to that required under [the Base Program].”*



# Best Management Practices Program

- \* Farm operator agrees to implement approved BMPs on their farm relating to water conveyance, Irrigation systems, and efficient water & soil management practices.
- \* Must implement and report on practices annually, in addition to adhering to water use reporting requirements, under BMP farm unit number.
- \* No annual allotment to adhere to, therefore the water duty & flexibility account provisions are irrelevant to IGFRs while enrolled in the BMP Program.

AMA	Number of IGRs Enrolled in the BMP Program	Irrigation Acres Enrolled in the BMP Program
Phoenix	172	26,700
Pinal	312	83,481
Total	484	110,181



# BMP Program Categories

1. Water Conveyance Improvements
2. Farm Irrigation Systems
3. Irrigation Water Management
4. Agronomic Management



# 5<sup>th</sup> Management Plans Development Process



# Estimated 5MP Timeline

[new.azwater.gov/5MP](http://new.azwater.gov/5MP)

## 2020: Development

- Work Group, Subgroups, & Stakeholder Outreach
- Data Analysis
- Develop **Concepts** to Increase Conservation
  - Update Existing Programs
  - Design New Programs

## 2021: Drafting

- Build out **Concepts** developed in previous phase
  - Regulatory Language
  - Feedback from GUACs/AMAs re: Customization & Implementation
- Draft Narrative & Background
- Develop Data Tools

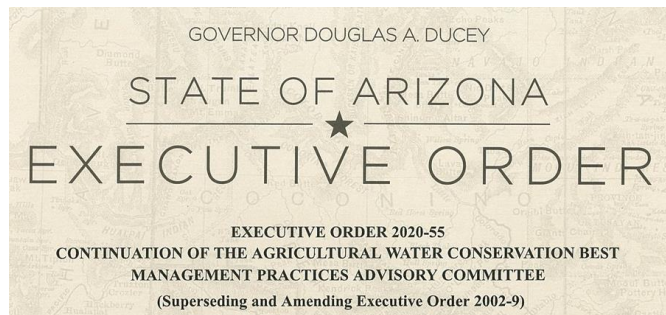
## 2022: Adoption

- Publication of initial drafts
- Presentation to GUACs for recommendations
- Promulgation processes
  - Hearing & Public Comment
  - Findings & Adoption
  - Noticing of Conservation Requirements



# Ag BMP Advisory Committee

- \* Executive Orders: Initially established by executive order in 2002 and was continued in November of 2020 by Governor Doug Ducey's [Executive Order 2020-55](#).
- \* Role: Advising ADWR's Director regarding the Agricultural BMP Program as the fifth management plans and future management plans are finalized and promulgated.
- \* Chair: Scott Riggins



## Arizona farmers raised the bar on themselves (and the water conservation debate)

*Opinion: Farmers asked Arizona to require more of them in an irrigation best management practices program. It's more than just a feel-good move.*

**Joanna Allhands** Arizona Republic  
Published 7:00 a.m. MT Apr. 24, 2021

Not all farmers were on board at first with the idea of raising the bar on themselves. There were tense internal conversations but also a lot of note-trading on irrigation practices. That should show up on farms, even if more don't end up joining the BMP.

Farmers and the Department of Water Resources were willing to give and take, creating a program that much more closely matches the reality of farming today.

And, most importantly, both sides now have a much closer working relationship, which is sure to pay off as the state enters a new era of [shortage on the Colorado River](#).

### References:

- <https://new.azwater.gov/ama/bmp/meetings>
- <https://new.azwater.gov/sites/default/files/media/EO202055.pdf>
- <https://www.azcentral.com/story/opinion/op-ed/joannaallhands/2021/04/24/arizona-farmers-raise-bar-water-conservation-debate/7286351002/>



# More Information

- \* The full BMP List can be found in Appendix 4B of each 4<sup>th</sup> Management Plan: <https://new.azwater.gov/ama/management-plans>
- \* Discussions regarding 5MP updates to the BMP Program occurred in meetings of the Ag BMP Advisory Committee: <https://new.azwater.gov/ama/bmp/meetings>
- \* Draft legal language for the Agricultural Conservation Programs has been posted online with an updated list of BMPs, intended for inclusion in the 5MPs: <https://new.azwater.gov/5MP/plans-concepts>



# Questions?

**Natalie Mast**

**AMA Director – Management Plans**  
nlmast@azwater.gov

**Management Plans Work Group:**  
[new.azwater.gov/5MP](https://new.azwater.gov/5MP)

**Concepts Page:**  
<https://new.azwater.gov/5MP/plans-concepts>

**Full Text of Management Plans:**  
[new.azwater.gov/ama/management-plans](https://new.azwater.gov/ama/management-plans)





# Closing Remarks



# Upcoming Meetings

December 9, 2021, 10:00 a.m.



# Contact Information

Jenna Norris  
Governor's Water Council Coordinator  
[jnorris@azwater.gov](mailto:jnorris@azwater.gov)

John Riggins  
Statewide Planning Manager  
[jrriggins@azwater.gov](mailto:jrriggins@azwater.gov)

Carol Ward  
Deputy Assistant Director  
[cward@azwater.gov](mailto:cward@azwater.gov)

ADWR/Council web page:  
[www.azwater.gov/gwaicc](http://www.azwater.gov/gwaicc)

